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Mark K. Williams
Janice G. Pero

<120> METHODS AND ORGANISMS FOR PRODUCTION OF B6 VITAMERS

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<220>

<223> promoter sequence

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<223> promoter sequence

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<210> 13

<211> 42

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<400> 13

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<213> Artificial Sequence

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<223> ribosome binding site

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<212> DNA

<213> Artificial Sequence

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<223> ribosome binding site

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<211> 1282

<212> DNA

<213> Bacillus subtilis

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<210> 21

<211> 293

<212> PRT

<213> Bacillus subtilis

<400> 21

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Ala Asp Ile Arg Ala Ala Gly Gly Val Ala Arg Met Ala Asp Pro Thr
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Ile Val Glu Glu Val Met Asn Ala Val Ser Ile Pro Val Met Ala Lys
 65          70          75          80
Ala Arg Ile Gly His Ile Val Glu Ala Arg Val Leu Glu Ala Met Gly
 85          90          95
Val Asp Tyr Ile Asp Glu Ser Glu Val Leu Thr Pro Ala Asp Glu Glu
100          105          110
Phe His Leu Asn Lys Asn Glu Tyr Thr Val Pro Phe Val Cys Gly Cys
115          120          125
Arg Asp Leu Gly Glu Ala Thr Arg Arg Ile Ala Glu Gly Ala Ser Met
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Leu Arg Thr Lys Gly Glu Pro Gly Thr Gly Asn Ile Val Glu Ala Val
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Arg His Met Arg Lys Val Asn Ala Gln Val Arg Lys Val Val Ala Met
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Ser Glu Asp Glu Leu Met Thr Glu Ala Lys Asn Leu Gly Ala Pro Tyr
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Glu Leu Leu Leu Gln Ile Lys Lys Asp Gly Lys Leu Pro Val Val Asn
195          200          205
Phe Ala Ala Gly Gly Val Ala Thr Pro Ala Asp Ala Ala Leu Met Met
210          215          220
Gln Leu Gly Ala Asp Gly Val Phe Val Gly Ser Gly Ile Phe Lys Ser
225          230          235          240
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245          250          255
Phe Thr Asp Tyr Lys Leu Ile Ala Glu Leu Ser Lys Glu Leu Gly Thr
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<210> 23
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 <213> Bacillus subtilis

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 35 40 45
 Ser Thr Thr Met Arg Arg Leu Ile Asp Thr Tyr Gln Phe Met Glu Pro
 50 55 60
 Leu Arg Glu Phe Ala Ala Gln Gly Lys Pro Met Phe Gly Thr Cys Ala
 65 70 75 80
 Gly Leu Ile Ile Leu Ala Lys Glu Ile Ala Gly Ser Asp Asn Pro His
 85 90 95
 Leu Gly Leu Leu Asn Val Val Val Glu Arg Asn Ser Phe Gly Arg Gln
 100 105 110
 Val Asp Ser Phe Glu Ala Asp Leu Thr Ile Lys Gly Leu Asp Glu Pro
 115 120 125
 Phe Thr Gly Val Phe Ile Arg Ala Pro His Ile Leu Glu Ala Gly Glu
 130 135 140
 Asn Val Glu Val Leu Ser Glu His Asn Gly Arg Ile Val Ala Ala Lys
 145 150 155 160
 Gln Gly Gln Phe Leu Gly Cys Ser Phe His Pro Glu Leu Thr Glu Asp
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 His Arg Val Thr Gln Leu Phe Val Glu Met Val Glu Glu Tyr Lys Gln
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 <212> DNA
 <213> Escherichia coli

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 <211> 329
 <212> PRT
 <213> Escherichia coli

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 35 40 45
 Met Leu Gly Leu Pro Leu Thr Leu Arg Pro Tyr Ser Pro Asn Ser Pro
 50 55 60
 Ala Gln Pro Gln Thr Ala Gly Thr Leu Thr Leu Leu Pro Val Ala Leu
 65 70 75 80
 Arg Ala Pro Val Thr Ala Gly Gln Leu Ala Val Glu Asn Gly His Tyr
 85 90 95
 Val Val Glu Thr Leu Ala Arg Ala Cys Asp Gly Cys Leu Asn Gly Glu
 100 105 110
 Phe Ala Ala Leu Ile Thr Gly Pro Val His Lys Gly Val Ile Asn Asp
 115 120 125
 Ala Gly Ile Pro Phe Thr Gly His Thr Glu Phe Phe Glu Glu Arg Ser
 130 135 140
 Gln Ala Lys Lys Val Val Met Met Leu Ala Thr Glu Glu Leu Arg Val
 145 150 155 160
 Ala Leu Ala Thr Thr His Leu Pro Leu Arg Asp Ile Ala Asp Ala Ile
 165 170 175
 Thr Pro Ala Leu Leu His Glu Val Ile Ala Ile Leu His His Asp Leu
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 Arg Thr Lys Phe Gly Ile Ala Glu Pro Arg Ile Leu Val Cys Gly Leu
 195 200 205
 Asn Pro His Ala Gly Glu Gly Gly His Met Gly Thr Glu Glu Ile Asp
 210 215 220
 Thr Ile Ile Pro Val Leu Asn Glu Leu Arg Ala Gln Gly Met Lys Leu
 225 230 235 240

Asn Gly Pro Leu Pro Ala Asp Thr Leu Phe Gln Pro Lys Tyr Leu Asp
 245 250 255
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 260 265 270
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 Pro Phe Ile Arg Thr Ser Val Asp His Gly Thr Ala Leu Glu Leu Ala
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<210> 27
 <211> 243
 <212> PRT
 <213> Escherichia coli

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 35 40 45
 Asp Arg Arg His Ile Thr Asp Arg Asp Val Arg Ile Leu Arg Gln Thr
 50 55 60
 Leu Asp Thr Arg Met Asn Leu Glu Met Ala Val Thr Glu Glu Met Leu
 65 70 75 80
 Ala Ile Ala Val Glu Thr Lys Pro His Phe Cys Cys Leu Val Pro Glu
 85 90 95
 Lys Arg Gln Glu Val Thr Thr Glu Gly Gly Leu Asp Val Ala Gly Gln
 100 105 110
 Arg Asp Lys Met Arg Asp Ala Cys Lys Arg Leu Ala Asp Ala Gly Ile
 115 120 125
 Gln Val Ser Leu Phe Ile Asp Ala Asp Glu Glu Gln Ile Lys Ala Ala
 130 135 140
 Ala Glu Val Gly Ala Pro Phe Ile Glu Ile His Thr Gly Cys Tyr Ala
 145 150 155 160
 Asp Ala Lys Thr Asp Ala Glu Gln Ala Gln Glu Leu Ala Arg Ile Ala

OGZ-002US

				165					170					175		
Lys	Ala	Ala	Thr	Phe	Ala	Ala	Ser	Leu	Gly	Leu	Lys	Val	Asn	Ala	Gly	
			180					185					190			
His	Gly	Leu	Thr	Tyr	His	Asn	Val	Lys	Ala	Ile	Ala	Ala	Ile	Pro	Glu	
		195					200					205				
Met	His	Glu	Leu	Asn	Ile	Gly	His	Ala	Ile	Ile	Gly	Arg	Ala	Val	Met	
	210					215					220					
Thr	Gly	Leu	Lys	Asp	Ala	Val	Ala	Glu	Met	Lys	Arg	Leu	Met	Leu	Glu	
225					230					235					240	
Ala	Arg	Gly														